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APPARATUS FOR INSULATING AND ELECTRICALLY CONNECTING PIEZOELECTRIC MOTOR IN DUAL STAGE ACTUATOR SUSPENSION

CROSS REFERENCE TO RELATED APPLICATION

This application claims the benefit of U.S. Provisional Application no. 60/416,479 filed October 7, 2002, the entire contents of which are hereby expressly incorporated by reference.

FIELD OF THE INVENTION

This invention is directed to differential actuation of one or more piezoelectric transducer (PZT) motors on a disk drive head suspension.

BACKGROUND OF THE INVENTION

Conventionally, PZT motors have a generally planar configuration, with one or two opposing major faces plated or otherwise coated with a conductive material, such as gold. Conventionally, it has been known to ground one face of the PZT and electrically energize the other face to actuate the PZT. Applying one polarity of voltage causes the PZT to contract in a direction parallel to the faces having electrodes, while applying the other polarity causes the PZT to expand in a direction parallel to the plane of the opposing major faces having the electrodes. It is to be understood that, while the PZT is expanding in the direction parallel to the plane of the opposing major faces, it is correspondingly contracting in a perpendicular direction, and conversely, when the PZT is contracting in the direction parallel to the plane of the opposing major faces, it is correspondingly expanding in the perpendicular direction. The present invention preferably makes use of the movement (of expansion or contraction) in the direction parallel to the plane of the opposing major faces carrying electrodes, while accommodating or "tolerating" the movement perpendicular thereto.

BRIEF DESCRIPTION OF THE DRAWINGS